

DaimlerChrysler AG
Stuttgart

Patent claims:

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1. Process for the desulphurization of an engine fuel onboard a motor vehicle by separating off the sulphur-containing components of the engine fuel by means of selective liquid-phase adsorption on an adsorption material.

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2. Process according to Claim 1 or 2, characterized in that the adsorption material has an internal surface area of from 10 to 1 600 m²/g.

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3. Process according to one of the preceding claims, characterized in that the adsorption material contains Al, Mg, Si or Ti in oxide form, such as for example Al₂O₃, MgO, SiO₂, TiO₂, zeolites, hydrotalcites, mixed oxides or the said substances doped with a metal, such as for example alkali metals, alkaline-earth metals, rare earths, Ag, Cu, Co, Fe, Mn, Ni, V, Zn.

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4. Process according to one of Claims 1 or 2, characterized in that the adsorption material is a biogenic material, such as for example an enzyme, or contains microorganisms.

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5. Process according to one of the preceding claims, characterized in that the fuel is a petrol or diesel fuel or kerosine or methanol.

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6. Process according to one of the preceding claims, characterized in that the low-sulphur fuel obtained is used immediately or is collected in a tank.

7. Process according to one of the preceding claims, characterized in that the low-sulphur fuel obtained is used as reducing agent for deNOx catalytic converters in lean exhaust gas.

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8. Process according to one of the preceding claims, characterized in that the adsorption material is arranged

in series with the fuel pump or as/bypass circuit with respect to the fuel pump.

5 9. Process according to Claim 8, characterized in that the low-sulphur fuel obtained in the bypass circuit is used when the engine is in lean-burn mode or during desulphurization of the exhaust-gas after-treatment system of the engine.

10 10. Process according to one of the preceding claims, characterized in that the adsorption material is integrated in a single structural unit with the material for the fuel filtering.

11. Process according to one of the preceding claims, characterized in that the laden adsorption material is regenerated onboard the motor vehicle or is replaced.

15 12. Process according to Claim 11, characterized in that the engine oil or the engine coolant of the motor vehicle is used as heat source for the regeneration of the adsorption material.

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